II.—*On the Identification of certain Diamond Mines in India which were known to and worked by the Ancients, especially those which were visited by Tavernier. With a note on the history of the Koh-i-nur.*— By V. Ball, Esq., M. A., F. G. S., *Geological Survey of India.*

(*Two woodcuts.*)

Having recently published a general account of Indian diamond deposits* in which I unfortunately allowed myself, in more than one instance to be misled by untrustworthy authorities and having still more recently had an opportunity of consulting original works not available to me when I wrote, I am anxious, on this the first opportunity to correct, as far as possible, the errors to which I have given currency and to place on record some of the more important conclusions at which I have arrived.

Undoubtedly the best general account of Indian diamond deposits published up to within the past few years is that by Karl Ritter in his *Erdkunde Asien* (Vol. VI, 1836). This most careful and assiduous compiler has been quoted and misquoted, generally without acknowledgment, by a host of subsequent compilers, none of whom have supplemented his account by reference to the modern researches published by the Geological Survey of India. I am compelled to add that one of the latest writers on Indian Diamonds,† has by not having had recourse to this last source of information, misled his readers as to the positive amount of knowledge possessed at present regarding the mode of occurrence of Indian Diamonds. He has rehabilitated several long exploded theories as to their age. In his identification of the localities visited by Tavernier he has been rather wide of the mark while other parts of his paper especially his table of diamond weights are internally inconsistent with one another.

Tavernier's visits to India took place in the middle of the 17th century. He describes the mines at three localities, namely, Raolconda in the Carnatic, Gani or Coulour in the kingdom of Golconda and Soumelpour.

The identification of these three localities, has, so far as I can ascertain never been successfully made out. It is the object of this paper to describe the result of my investigations and also to draw attention to the fact that the Diamond mines mentioned in the Ain-i-Akbari as being situated at Beiragarh‡ are known to have been at a spot where traces of the mines are still to be seen.

* Scientific Proceedings of the Royal Dublin Society, 1880.
† Quarterly Journal of Science, N. S. Vol. VI, 1876.
‡ Vide Gladwin's Translation, Vol. II, p. 58.

It is not within the scope of this communication to describe the mines themselves, that I have done already elsewhere and hope to do so again more fully hereafter. It is from the historical point of view alone that they are discussed at present.

I. Gani-Coulour *not identical with* Gani-Partiál *Lat.* 16° 39′ *Long.* 80° 27′ *but with* Kollur *Lat.* 16° 42′ 30″ *Long.* 80° 5′. (Atlas Sheet No. 75.)

The mines at Gani called also Coulour by the Persians were situated, according to Tavernier, seven days' journey eastwards from Golconda.* In a subsequent chapter† to that in which the above statement is made he adds some details regarding the route.   The itinerary being as follows :

Golconda to Almaspinde, ...	$3\frac{1}{2}$	Gos (? $2\frac{1}{2}$)
Almaspinde to Kaper, ...	2	,,
Kaper to Montecour, ...	$2\frac{1}{2}$	,,
Montecour to Nagelpar, ...	2	,,
Nagelpar to Eligada,.......................	$1\frac{1}{2}$	,,
Eligada to Sarvaron,.......................	1	,,
Sarvaron to Mellaserou, ...	1	,,
Mellaserou to Ponocour, ...	$1\frac{1}{4}$	,,
From Ponocour you have only to cross the river to Coulour or Gani.		
Total	$14\frac{3}{4}$	Gos.

The total of these items amounts to $14\frac{3}{4}$ *gos* and in the English edition of the Travels‡ amounts to $15\frac{3}{4}$.   But it must be concluded that both tables contain misprints since Tavernier expressly says that the distance was $13\frac{3}{4}$ *gos* or 55 French leagues the *gos* being equal to 4 leagues.   Taking this league to be equal to $4,444\frac{1}{2}$ metres its value expressed in English miles would be 2·78 and therefore the *gos* (2·78 × 4) would be equal to 11·12 English miles,§ or rather less than the modern Indian stage distance of 6 coss or about 12 miles.   The distance of Coulour from Golconda was therefore, by the route taken by Tavernier, 153 miles (11·12 × 13·75.) It is impossible to identify all the names of stages mentioned in the above list, some of them as Almaspinde and Montecour have a very

* Voyages, Liv. II, Chap. XVI, p. 304, Paris, 1677.
† *Idem.*, Chap. XVIII, p. 316.
‡ Lond. fol 1684, p. 142.
§ Heyne (Tracts, p. 94) mentions the *Gow* as a term in use in his time (1795). It was, he says, equal to eight miles.

un-Indian sound about them; but Eligada seems to be Oorlagondah of Atlas sheet 75 (Lat. 17° 15′ Long. 79° 55′) and Sarvaron and Mellaserou may very possibly be represented by the modern Singawarum and Maillacheroo, they being separated from one another and from the crossing of the Kistna river to certain diamond mines, by distances which correspond, nearly, to those given by Tavernier.

If the diamond mines of Coulour were situated south of the Kistna and that was the river crossed and not its tributary the Moonyair then they were wholly distinct from those of Partiál. In favour of this there is much to be said. On the south bank of the Kistna west of Chintapilly in Lat. 16° 42′ 30″ and Long. 80° 5′ there is a diamond locality which on the oldest engraved map I have seen, that by Thomas Jefferys, (London, 1768) is called Kalur or Gani. This it may be thought would finally settle the question, but as I shall have to say when speaking of Raolconda both this authority and Rennell evidently took their information, from Tavernier, and not from independent sources.

Fortunately a manuscript map by Col. Colin Mackenzie, of the Nizam's dominions, which is dated 1798, indicates this locality as Coulour and marks it as a diamond mine. Partiál is written *separately* in its proper place as Gani-Purtial and so also is a well known intermediate locality at Istapully and both are marked as having diamond mines. I think on the whole we are bound to conclude therefore that Tavernier's Gani Coulour was not identical with Gani Purtial the modern Partiál but with the modern Kollur as it is written on the Atlas Sheet No. 75. So far as can be seen from the map its surroundings are not inconsistent with Tavernier's description, he says the mine is close to a large town on the same river (Kistna?) which he crossed on the road to Raolconda, and that a league and a half from the town there are high mountains which are in the form of a cross. In the intervening plain the search for diamonds was carried on. The locality too, it may be added, is in the middle of presumedly diamond bearing rocks.

Now as regards this word Gani there is still a remark to be made. Its recurrence in the titles of two mines which I have shewn were distinct, suggests that it was not a proper name, and that in fact it really meant ' mine of ' being only a corruption of *Kan i.*[*] We know that the letters G and K are interchangeable in some Indian languages and therefore no particular effort is required to accept the view that Gani Coulour meant simply the mine of Coulour, *i. e.*, the modern Kollur. So that to speak of, the mine of Gani, as is often done, is meaningless tautology.

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[*] I am indebted to Mr. Baden Powell, C. S. for this interpretation, vide ' Punjab Manufactures', p. 197.

Identity of the Great Mogul Diamond with the Koh-i-nur.

As the identity of the Great Mogul or Kollur diamond has been the subject of much controversy I think it well to include the following note here since it properly comes under the head of Gani-Coulour or Kollur. Tavernier states that not only it, but many other large stones were produced there, and he adds, that, in his time the miners still continued to find large stones in the same mines.

I shall first quote *verbatim* and then analyze what Tavernier has written regarding this diamond. Having gone to take leave of the Great Mogul (Aurangzeb) on the 1st of November 1665, he was invited to return on the following morning to see the Emperor's jewels. He says,[*] " The first object which Akel Kan (the Custodian of the Jewels) put in my hands was the great diamond, which is a rose, round, very convex (? haute) on one side ; at the edge of one side there is a small notch (cran) with a flaw in it. The water is perfection and it weighs $319\frac{1}{2}$ *ratis* which are equal to 280 of our carats the rati being $\frac{7}{8}$ of a carat. When Mirgimola who betrayed the king of Golconda, his master, made a gift of this stone to Sháh Jehán from whom it is descended it was uncut and weighed 900 *ratis* which are equal to $787\frac{1}{2}$ carats and it had many flaws. If this stone had been in Europe it would have been differently treated, for some good pieces would have been taken from it and the stone left much larger, as it is it has been almost polished away. It was *Sieur* Hortensio Borgio, a Venetian who cut it, for which he was badly paid. They reproached him with having spoilt the stone which ought to have remained heavier and instead of paying him, the Emperor made him pay a fine of 10,000[†] (rupees) and would have taken still more if he had possessed it. If Hortensio had known his work better he might have taken some good pieces off without doing injury to the king and without having expended so much trouble in polishing it, but he was not a very accomplished diamond-cutter."

It is now believed by some authorities that very large pieces, including the Orloff diamond were as a matter of fact cleaved off from the original Great Mogul. Certainly cleavage had as much to do with the shape of the Koh-i-Nur as polishing.

In the chapter on his visit to the mines at Coulour,[‡] he says that the Great Mogul diamond was found there. If this be true and also that the mine was only discovered about 100 years before his visit, which

[*] Voyages, Vol. II, Livre, 2, p. 249.   Paris Ed. 1677.

[†] Even this item is variously stated by compilers who seem to have been the cause of much of the confusion that exists about the weights &c., of this historical gem.

[‡] l. c., p. 305.

took place between the years 1665 and 1669, then this diamond cannot have the great antiquity claimed for it by some of those who consider it to be identical with the Koh-i-nur.

Tavernier's third mention of this diamond which is accompanied by a figure is as follows : " This diamond belongs to the Great Mogul who did me the honour to show it to me with all his other jewels one sees the form which it received on being cut. On my being permitted to weigh it I have found its weight to be $319\frac{1}{2}$ *ratis* which are $279\frac{9}{16}$ of our carats. In its rough state it weighed as I have said 907 *ratis* which are $793\frac{5}{16}$ carats. The stone has the same form as if one cut an egg in two."

He gives us therefore two different accounts of its weight in the rough, 900 ratis or $787\frac{1}{2}$ carats and 907 ratis or $793\frac{5}{16}$ carats. It is obvious that there is a mistake as the two do not agree in any respect even the equivalent values calculated at $1 \ rati = \frac{7}{8}$ of a carat should be $787\frac{1}{4}$ and $793\frac{5}{8}$. I have already pointed out strange and unaccountable defects in Tavernier's arithmetic.

Different weights and measures appear to have been used in different parts of the country in his time, the mangelin $= 1\frac{3}{4}$ carats or 7 grains at Raolconda and Coulour · the $rati = \frac{7}{8}$ of a carat or $3\frac{1}{2}$ grains at Soumelpour. If we could with approximate accuracy fix the value of the *rati* mentioned by Tavernier we might succeed perhaps in instituting a fair comparison between the Great Mogul and other diamonds. It seems to be difficult to believe that it equalled $3\frac{1}{2}$ grains as he states. In Nagpur in the year 1827 according to Mr. Jenkins the *rati* was only 2·014 grains. The French grain was equal to about ·77 of a troy grain, therefore since the *rati* contained $3\frac{1}{2}$ of these, its value would have been 2·695 or say 2·7 troy. This fact seems to have been overlooked by some who have endeavoured to reduce the weights given by Tavernier : non-experts too, appear to have forgotten that the diamond grain is not identical with any other grain, though our English carat contains 4 of these grains it only consists of 3·174 troy grains.[*] So calculated, the weight of the Great Mogul would be $\dfrac{319\cdot5 \times 2\cdot7}{3\cdot174} = 271\cdot78$ English carats. If in this equation we could see our way to putting the value of Tavernier's *rati* at 1·84 instead of 2·7 then the exact weight of the Koh-i-nur when brought to England would be obtained but for this there is perhaps no necessity. Another system of calculation is used by the writer of a note in the Great Exhibition Catalogue of 1851, in which he adopts the known maximum weight of a *rati* at $2\frac{3}{16}$ grains (? what grains) and thence deduces 175 carats as the weight of the Great Mogul. This is somewhat short of the $186\frac{1}{16}$ carats of the Koh-i-nur while the other is too large. Supposing the Koh-i-nur to be identical with the Great

[*] *Vide* Encyclopædia Britannica, Art. Diamond.

Mogul it may have been mutilated during its travels and this may account for the loss in weight $271.78 - 186.06 = 85.72$ carats, and for the difference in its shape when brought to England from the sketch given by Tavernier.
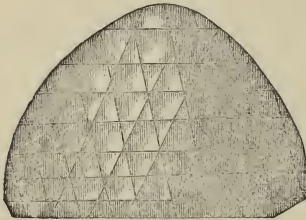
THE GREAT MOGUL
(From sketch by Tavernier).

THE KOH-I-NUR
(Before recutting).

It is probable moreover that Tavernier's sketch or diagram as it might be called, which is here reproduced for comparison, was from memory and was therefore more regular in outline than the original. The name Great Mogul was, of course, not of native origin but was probably first conferred by Tavernier. By the natives, it was in all probability originally known as the Kollur diamond. In reference to this I was quite accidentally informed, by a native jeweller of Calcutta that it has been suggested, if not absolutely stated by some native writer that the title Koh-i-nur really owes its origin to a change in the originally meaningless name Kollur. Such changes, in which, while the sound is more or less retained, a meaning is acquired are not by any means rare in Oriental languages while they sometimes occur in those of Europe. Thus English surnames in the mouths of natives become changed into words of similar sound which have a meaning in Hindustani or whatever the language spoken may be.

From the above I think it will be admitted that there are good reasons for believing in the identity of the Great Mogul or Kollur diamond of Tavernier with the Koh-i-nur. In spite of the slight differences in weight in his two statements we cannot suppose that he saw two distinct diamonds, and the hypothesis that the Great Mogul diamond still exists in Persia under a different name is wholly without foundation.

II. RAOLCONDA, *identical with Rawduconda, Lat.* 15° 41' *Long.* 76° 50'.— *District of Mudgul in Haidrabad.*

It has hitherto been supposed by all the authors to whose writings I have had access that Tavernier's Raolconda can no longer be traced and certainly the investigation presents some difficulties, but I venture to believe that the following affords the right clue to its identification.

According to Tavernier* Raolconda was situated in the Province *'Carnatica'*† five days' journey from Golconda and eight or nine from Visapour (Bijapur). Remembering that he states that he crossed the river separating the kingdoms of Golconda and Visapour, *i. e.*, the Kistna or its tributary the Bhima and fixing the rate of travelling at 20 miles a day which seems to have been Tavernier's average, we should arrive at the conclusion that Raolconda was situated somewhere in the angle between the Kistna and Toongabudra rivers and not far from their junction ; but as in the case of Gani-Coulour, Tavernier gives a route list of the stages between Golconda and Raolconda which, on analysis, proves to be quite inconsistent with the above stated distance between them. This list is as follows :—

1.	Golconda to Canapour, ...	1	*Gos.*	
2.	Canapour to Parquel, ...	$2\frac{1}{2}$	,,	
3.	Parquel to Cakenol, ...	1	,,	
4.	Cakenol to Canol-Candanor,................	3	,,	
5.	Canol-Candanor to Setapour,...	1	,,	
6.	Setapour to the river,.......	1	,,	
	(This river is the frontier of the kingdoms of Golconda and Visapour, *i. e.*, the Kistna).			
7.	The river to Alpour, ...	$\frac{3}{4}$	,,	(?)
8.	Alpour to Canol, ...	$\frac{3}{4}$	,,	(?)
9.	Canol to Raolconda, ...	$2\frac{1}{2}$	,,	

The total of these items would be $14\frac{1}{2}$

Here again there is something wrong in the arithmetic since Tavernier gives the total as being 17 *gos.* probably the items 7 and 8 are misprints for 3 each. To begin with there are here given 9 stages and the distance 17 Gos. or 68 French leagues must have been, according to the method of calculation adopted above in the case of Gani-Coulour,‡ about 189 miles. If Gani-Coulour 150 miles distant from Golconda was a seven days' journey it follows that Raolconda must have been much nearer nine than five, and therefore it seems probable that Tavernier really meant to write exactly the converse of what he did write, and that we should transpose the distances given respectively of Raolconda from Golconda and from Visapour.

This being done and these new indices of position being applied to the map, we are led unhesitatingly to identify Tavernier's Raolconda with the

* Voyages des Indes, Paris, 1867, Ser. II, Chap. XV, p. 293.

† This term or rather Karnata was an ancient Hindu geographical division which comprehended the tableland of South India *above* the Ghats. See Hamilton's Hindustán, Vol. II, p. 247. Also Ferishta's History by J. Scott, Vol. I, p. 45.

‡ *i. e.*, one league = 2·78 English miles.

modern Rawduconda in Lat. 15° 41′ and Long. 76° 50′. That Raolconda was not *on* the Kistna or its tributary the Bhima as some writers have supposed is evident from the fact that Tavernier states that on his return journey from Raolconda the governor gave him an escort of six horsemen in order that he might traverse in safety the tract under his government up to the river separating the two kingdoms and which was, as shewn above, at the 6th of 9 stages on his outward journey.

Rawduconda, as the crow flies, is situated 165 miles south-west from Golconda and by road it must be quite 189 miles. From Bijapour (or Visapour) it is about 110 miles or some five days' journey to the south east. The town is 6 miles distant from the western bank of the Toongabudra river one of the principal feeders of the Kistna. From the station of Raichúr on the Madras Railway Rawduconda is about 50 miles distant in a south-westerly direction.

I believe it will be admitted by all who care to investigate the question that the above is a legitimate conclusion. Tavernier's two statements as they stand are clearly contradictory, but the first being amended as I have suggested their united testimony seems to compel the conviction that we have at length identified his Raolconda.

Tavernier describes the neighbourhood of Raolconda as being sandy and full of rocks and thickets somewhat similar to the environs of Fontaine-bleau.* I have not seen any recent account of the locality and the geology can only be guessed at. All round at no great distance crystalline rocks are known to occur, but Tavernier's account of the matrix seems to indicate a rock other than any belonging to the crystalline series. However, it is no part of my present object to enter further into this question nor is it necessary to reproduce Tavernier's account here.

Captain Burton† who appears to have located Raolconda on the Bhima as he certainly did Gani (*i. e.*, Coulour) relates that he heard of diamonds in Raichúr and that Sir Salar Jung offered to arrange for his going there, but that he gave up the idea on hearing that there were only crystalline rocks there. It is possible that a tradition of diamonds at Rawduconda in the Mudgul Circar adjoining Raichúr may still linger at Haidrabad.

I let the above stand without alteration though since it was written I have had an opportunity of examining a number of old maps at the Surveyor General's Office, for which my thanks are due to Mr. James.

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* This description is very similar to that given by Newbold of the opposite or eastern bank of the river where granite rocks rise from a wide expanse of furrowed sand. *Vide* Madras Journal of Literature and Science, Vol. XI, p. 126. Unfortunately Newbold never mentions Rawduconda though he passed within a few miles of it while on two of his traverses.

† *Vide* Quarterly Journal of Science, Vol. VI, 1876.

Thomas Jefferys' engraved map of India, dated 1768 gives Tavernier's stages to Raolconda which is placed in the angle between the Bhima and Kistna with such accuracy that it is impossible not to conclude that the route was laid down to fit Tavernier's supposed line and not from independent evidence, there is too, other internal evidence that Jefferys took some of his localities from Tavernier.

Rennell's map of 1788 is open to precisely the same criticism. But a manuscript map of the Nizam's dominions by Col. Colin Mackenzie, dated 1798 largely drawn from actual surveys, does not represent any similar route terminating at Raolconda, but it does give Rawduconda in its right place. A village called Alpour situated south of Raichúr on this map may be identical with the locality, two marches from Raolconda, which is mentioned by Tavernier. Similarly Boorcull another village near Golconda may be Tavernier's Parquel. Heyne it is true in a map published with his tracts calls Karnul, Canoul and Canúl in the text, these are almost the same words as Tavernier's Canol.

In conclusion if Raolconda be not identical with Rawduconda I can only suggest that it may be Ramulkota a known diamond mine in Lat. 15° 34′ Long. 78° 3′ 15″ but being 120 miles as the crow flies from Haidrabad and 150 miles from Bijapur, two rivers, the Kistna and Tungabudra having to be crossed to reach it, *en route* from the former, it does not fit so well with Tavernier's description. Ramulkota is only about 19 miles south of Karnul whereas Rawduconda must have been 30 miles from Tavernier's Canol.

III.—SOUMELPOUR *of Tavernier situated in Chutia Nagpur and not identical with Sambalpur as has been supposed by some authors. Possibly represented by the modern Simah in Palamow, Lat. 23° 35′ N. Long. 84° 21′ E.*

When writing of Ptolomey's *Adamus flus* in the paper already quoted I pointed out that though doubtless it was intended for the Mahanadi its upper reaches are represented as passing through a region called Cocconage which is supposed to be identical with Chutia Nagpur. Though this is not exactly the case still one of the principal tributaries of the Mahanadi, namely, the Ebe, which is itself believed to be diamond bearing, passes through a large portion of Chutia Nagpur.

Although I included Tavernier's description of Soumelpour under the heading of Sambalpur I recognised that the facts did not seem to fit which I attributed to defective geographical knowledge on his part. There can be no question, however, that the Soumelpour which was visited by him was situated far to the north, being if not identical with, at least not very far removed from, the localities in Kokrah or Chutia Nagpur which

were discussed in a paper by the late Mr. Blochmann* who states that the Generals of Akbar and Jahángiri were led to invade Kokrah and attack the Rája on account of the diamonds which it was believed they would find there. Mr. Blochmann believed the river to have been the Sunk and I mention in my paper that a spot is still shown in that river where diamonds are said to have been found.

Tavernier's list of stages from Agra to this mine as in the other cases presents some perplexing items. It is as follows with the real distances in miles added for comparison.

	Costes.	Actual distance in miles.
Agra to Hulabas (Allahabad), ...	130	276
Hulabas to Benarous (Benares), ...	33	95
Benarous to Saseron (Sasseram), ...	4 ⎫	70
Saseron to Great Town, ...	21 ⎭	
Great Town to Rodas (Rhotas), ...	4	24
Total	192	465
Rodas to Soumelpour, ...	30	

There are several manifest inaccuracies in the above. The distance between Allahabad and Benares is in reality about one-third of that between Agra and Allahabad yet Tavernier makes it only one-fourth. The ' Great Town' mentioned, probably lay between Benares and Sasseram not between Sasseram and Rhotas. The items 4 and 21 should be transposed.

If Sasseram were 8 *costes* from Rhotas then since the distance is 24 miles, the *cost* would equal 3 miles and the same result would be obtained, nearly, from the distance between Allahabad and Benares, but by dividing the above totals of the table, *i. e.*, 465 by 192 we only get 2·4 as the value of the *cost*. If again we strike the average between these, 2·4 and 3, we get 2·7 as a final approximate value. Now multiplying the 30 costes which are stated to intervene between Rhotas and Soumelpour by this we obtain 81 miles as the distance between these places. The next question to determine is what locality at this distance from Rhotas answers to the following description of Soumelpour, " The Rája lives half a league from the town in tents set upon a rising ground at the foot whereof runs the *Gouel* descending from the southern mountains and falling into the Ganges." Just 80 miles from Rhotas at the foot of the Neturhat plateau there are the remains of an ancient town called Simah Lat. 23° 35′ Long. 84° 21′ rather more than a mile from the left bank of the Koel where it enters the Palamow subdivision from the highlands of Lohardagga.

* J. A. S. B. Vol. XL. pt. 1, p. 11.

Simah I take to be the same as *Semul* the name of the silk cotton tree (*Bombax malabaricum*) which attains an enormous size in that particular region, and Simah or Semul-púr might have very probably been written Soumelpour by Tavernier. That the name of the river, Gouel, is identical with Koel, under the circumstances, admits of no doubt whatever as the Koel runs northwards to join the Sone and so reaches the Ganges ; but it is perhaps open to question whether the present Koel or its tributary, the Aurunga, may have been intended.

Tavernier states that the diamond searchers worked up to the sources of the river in the hills 50 *costes* distant to the south. This though an exaggeration as applied to the length of the Koel would be wholly inapplicable to the Aurunga, but on the maps by Rennel of a century ago the name Koel was applied to the Aurunga while the present Koel, above the junction, bore the name Burwah or that of the region where it takes its rise. The highlands separating Palamow from Lohardugga proper form part of a water-shed between the rivers of the Ganges basin which flow northwards, and those of the Brahmini and Mahanadi basins which flow to the south. Among the former the Koel and the Aurunga are the principal and among the latter the Sunk and another Koel both of which, flowing southwards, combine to form the Brahmini.

If there were really two sets of diamond mines, one in each basin, it is probable that the sources of the diamonds were identical being situated in these ranges of hills which form the water-shed, unfortunately we do not know much of the geology although neighbouring areas have been pretty closely worked, but it will be interesting to see whether future research will prove the existence of an outlier of Vindhyan rocks—representatives of the formation being rarely absent from the vicinity of diamond mines in India. On Jeffery's map to which allusion has been made on a previous page, Soumelpur is placed on a river (doubtless the Koel) south of Rhotas and 15" north of a town called Jounpur. As no other towns save Soumelpur are given in the same region, it is clear that Jefferys took his data from Tavernier. Rennell, however, in his map of this region marks diamond mines south of the water-shed, *i. e.*, on the Sunk river.

There is still another point of interest to be mentioned with reference to the identification of these mines. A large picture, representing the attack upon the fort of Palamow in 1660 by Daud Khán, which has been described by the late Col. Dalton* contains a figure of the *Zamindar i Kán i almas*, or lord of the diamond mines, in the back ground. He is considered by Col. Dalton to be a Kol (Nagbunsi) Rája but why should he not be regarded as being precisely what he is described. He was probably the very

* J. A. S. B. Vol. XLIII. pt. I, 240.

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person whom Tavernier found living in tents on a rising ground only five years later.

I have reason to believe* that the late Mr. Blochmann was somewhat perplexed by the statement in the *Tuzuk-i-Jahángiri* that the presence of diamonds was indicated at particular spots by the hovering (?) over them of insects called *Jhinga*. Might not this term *Jhinga* have been a technical one meaning the same small pebbles which Tavernier calls ' thunder stones' and by the occurrence or absence of which the skilful miners, he says, knew whether the sand contained diamonds or not. They are believed to have been small spherical masses of iron ore.

IV.—BEIRAGARH—*mentioned in the Ain i Akbari identical with Wai-ragurh in the Chanda District C. P.* Lat. 20° 26'. Long. 80° 10'.

In the Ain i Akbari† which was written towards the close of the 16th century it is stated that there is a diamond mine at Beiragurh which had been conquered lately by Bubjeo otherwise called Chanda who was the zemindar of an ancient city in Subah Berar called Kullem.

An earlier notice of the locality occurs in Ferishta's History‡ from which we learn that the diamond mines at Kullem in Gondwara, where stood many temples, were taken possession of in the year 1425 by Ahmed Sháh Wali Bhamuni.

Again in the 'Brhat Sanhita,' in the chapter on Trying of Diamonds, the peculiarities of stones from the following localities are described. Vena river, Koçala, Surashtra, Supara, Himalya, Matanga, Kalinga Pundra. The second of these is I find from Genl. Cunningham's Ancient Geography probably Berar with Chanda for its capital town. Possibly, however, it here indicates quite a different place, namely, the modern Chicacole on the East Coast which might very possibly have been a mart for the sale of diamonds ; but the Vena river is believed to have been the Weingunga.

It is needless to enumerate the various suggestions as to the identity of Beiragurh by Rennell, Karl Ritter and others. It has now been clearly established that the ancient Kullem was identical with the modern Chanda and that Beiragurh is to-day represented on the maps by Waira-gurh on the Sath river a tributary of the Kophraguree which is itself a tributary of the Weingunga.

The exact position of the town is Lat. 20° 26' and Long. 80° 10'. On the opposite bank of the river the map shews a town called Hirapur. The existence of ancient excavations long since deserted and which are locally asserted to have been made for diamonds is attested to by Messrs.

* Vide J. A. S. B. XL, pt. I p. 114, note.
† Gládwin's Translation, London, 1800, Vol. II, p. 58.
‡ Ed. J. Briggs, London, 1819, Vol. II, p. 406.

Jenkins and Wilkinson, residents at Nagpur,* by Messrs. Hislop and Hunter† and more recently by Mr. Beglar of the Archæological Survey. The fact is also recorded in the Central Provinces Gazetteer under the heading of Wairagurh where, however, there is no mention of the identity of Beiragurh with Wairagurh although it is fully set forth in the historical account of Chanda in the same volume ; but this I did not see until I had independently come to the same conclusion.

As not improbably referring to this last locality it may be of interest to add the following from the account‡ of the Travels of Nicolo Conti in the early part of the 15th century. I cannot agree with the writer of the Introduction to the volume which contains this account that Golconda was intended. Nicolo Conti says that at 15 days' journey north of Bizengulia (by which Vijayanagar the modern Bijapur is intended) there is a mountain which produces diamonds called Albenigaras. Now Beiragarh, the modern Wairagarh, is as the crow flies about 324 miles north-eastwards of Bijapur and therefore within a possible 15 days' journey though, as the actual distance traversed would be greater it would require very hard travelling. However *Al*benigaras looks so like Beiragarh with the Arabic prefix *El'* or *Al'* that I am inclined to believe that it was the place intended. He goes on to say that the mountain being infested with serpents it is inaccessible, but is commanded by another mountain somewhat higher. " Here at a certain " period of the year men bring oxen which they drive to the top, and " having cut them into pieces, cast the warm and bleeding fragments upon " the summit of the other mountain by means of machines which they " construct for the purpose. The diamonds stick to these pieces of flesh. " Then come vultures and eagles flying to the spot, which seizing the meat " for their food, fly away with it to places where they may be safe from the " serpents. To these places the men afterwards come, and collect the " diamonds which have fallen from the flesh." Nicolo Conti continues with an account of how other less precious stones are obtained, and his description is that of ordinary Indian diamond mining. The travels of Sindbad the Sailor and of Marco Polo whose account apparently refers to localities in Golconda on the Kistna, have made this tradition of throwing pieces of meat in order that the diamonds may stick to them familiar to most people; yet an adequate explanation of the origin of the myth does not appear to have been offered hitherto. I believe the following to be a probable one.

Heyne in the account of his visit to the mines at Kadapah (Cuddapah) states that they were under the particular protection of Ammawáru (the

* Vide Calcutta Journal of Natural History, Vol. III, p. 290.
† Journal of the Geological Society, Vol. XI, p. 355.
‡ India in the 15th century. Hakluyt Society, p. 29.

sanguinary goddess of riches, *i. e.*, Lakshmi) and the miners objected to his riding on horseback up to the mines for fear of offending her. Now what can be more probable than that the miners, before opening a new mine, in order to invoke the aid of this sanguinary goddess made an offering to her of cattle or buffaloes.   Bloody sacrifices are known to be offered to Lakshmi in one of her forms.

The opening up of new mines was and is we are told by several authorities preceded by various rites and ceremonies.   The miners were probably never Hindus, and the custom of offering up cattle in sacrifice by the aboriginal tribes from the Todas to the Sontals is too well known to require special illustration.   If it be admitted that the opening of a mine was preceded by the sacrifice of cattle and the throwing the fragments of the flesh to be devoured by the fowls of the air, we at once arrive at the foundation of fact upon which this superstructure of fable has in all probability been erected.

Casual spectators and travellers may very easily have supposed that the slaughter of cattle and the subsequent throwing about pieces of meat was an essential part of the operations.   Any one with experience of how Oriental imagination can erect a tale of fiction on a small substratum of fact will find no difficulty in conceding that in the above supposition there is a sufficient explanation for the origin of the whole story.

It may be added that this propitiation of malefiant spirits was and is by no means limited to mining operations connected with diamonds. In the Journal of this Society* will be found an account of one of the richest gold bearing tracts in Assam which had been deserted by the indigenous gold washers in consequence of the expense connected with the propitiation of the evil spirits who guarded the mineral treasures, being greater than they could afford to pay.

III.—*List of* Mollusca *from the Hills between Mari and Tandiani.*— *By* W. Theobald, *Deputy. Supt. Geological Survey.*

The following list, which embraces three new species, was drawn up during a five months' residence at Tandiani, the hill station of Hazara. It will give a good idea of the molluscan fauna of the region, but is most unquestionably not exhaustive, and I trust to some of my younger colleagues taking up the work, which I regard as here only begun.

* Vol. XXII, p. 511.